THE SOF WARRIOR:

A DISRUPTIVE FORCE IN A COMPLEX ENVIRONMENT

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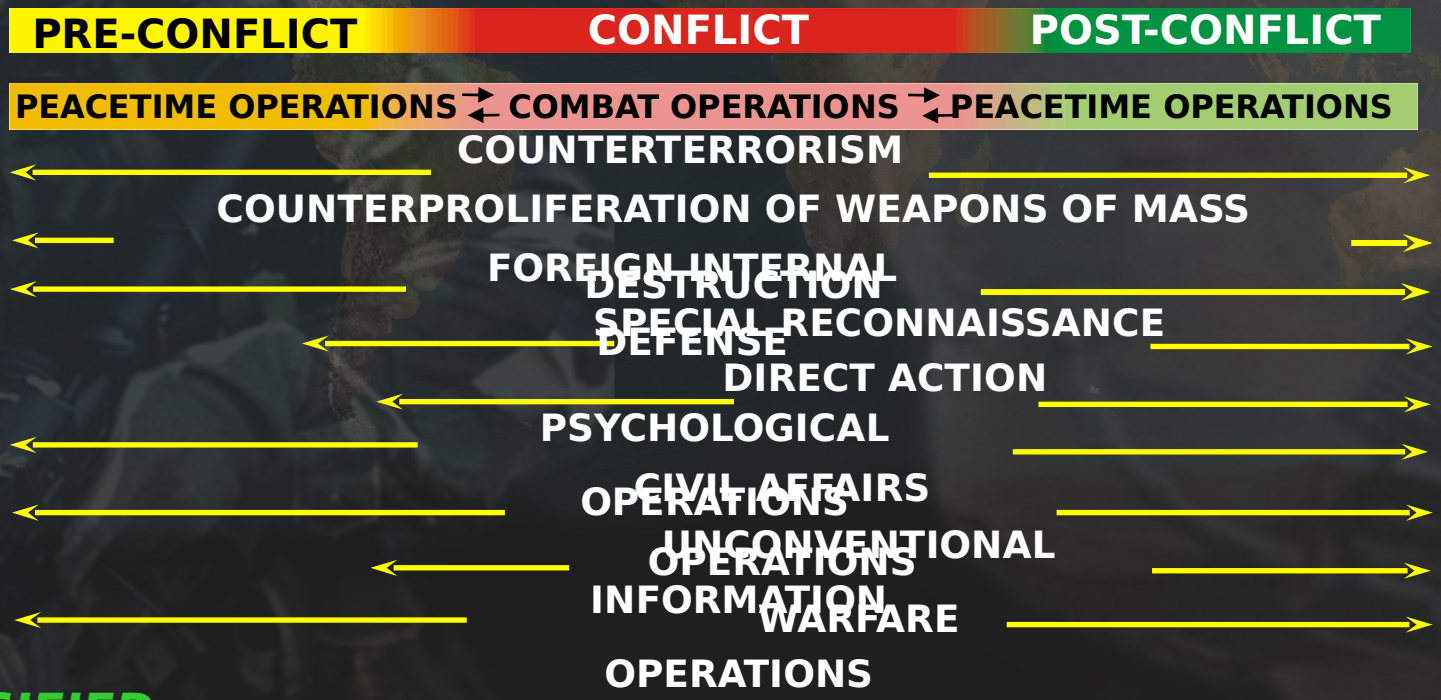
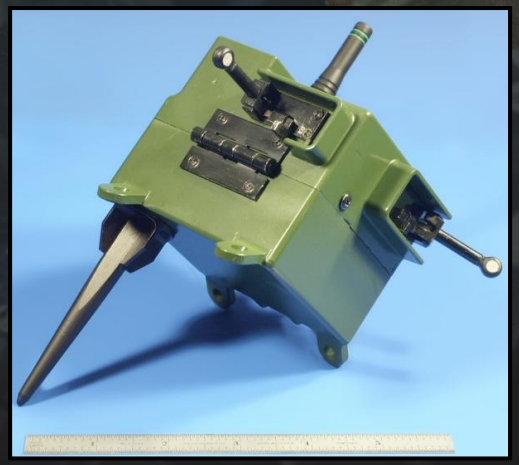
USSOCOM MISSION AND CORE TASKS

- **Mission**: "USSOCOM Plans, Directs, and Executes Special Operations in the Conduct of the War On Terrorism in Order to Disrupt, Defeat, and Destroy Terrorist Networks That Threaten the United States, Its Citizens and Interests Worldwide….."
- **Core Tasks**



USSOCOM OPERATIONAL FOCUS

- Method: Find, Fix, Finish, and Follow Up
  - Find Using Full Range Of Sensors, ISR, Analysis, HUMINT, …
  - Fix Using Superior Fires, Mobility, Agility, and Pervasive Communications
  - Finish Terrorists Wherever They Are Operating
    - Eliminate Safe Havens, Leadership, Training, and Membership Via Lethal/Direct Action Capabilities
  - Follow Up to Achieve Stability and Erosion of Base for Future Terrorists
- Very Good at Finishing - Need to Improve Find and Fix

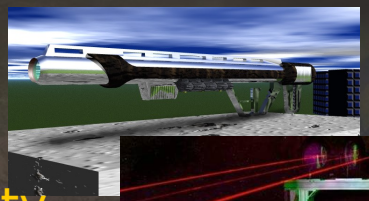


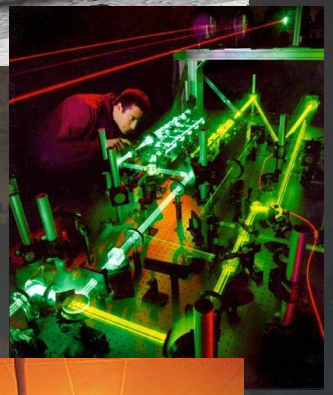
Advanced Sensors

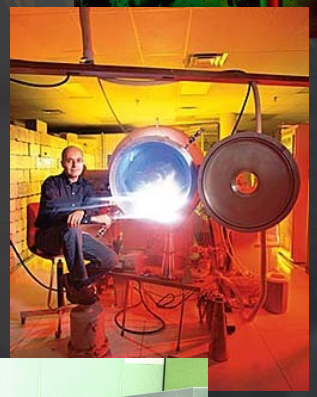
Superior Fire

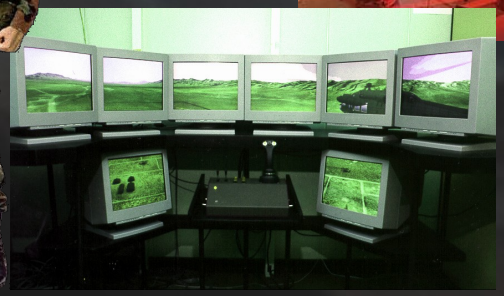
OSD DESIGINATED DISRUPTIVE TECHNOLOGIES

- Directed Energy Technologies
  - Non-Lethal Directed Energy
  - Prime Power/High Temperature Superconductivity
  - High Power Microwave (HPM) Attack
  - EMP and HPM Protection
  - Thermal Management
  - Phased Array Laser System
- Distributed Systems for ISR
- CBRNE Non-Intrusive Detection
- Virtual Training
- Individual Soldier Protection Systems









USSOCOM'S DISRUPTIVE TECHNOLOGIES

- USSOCOM has Experience in Several Technologies Considered as *Disruptive*: Advanced Tactical Laser, Active Denial System, UAV Payloads, Psychological Operations, and Special Operations Platforms

<u>However…The Most Important, Enduring, Core Disruptive Element of USSOCOM is the SOF Operator</u>

- Application of SOF in Any of the USSOCOM Assigned Core Tasks is Inherently a Disruptive Action. It is This Capability That USSOCOM Proposes to Enhance and Make More Disruptive by Use of Additional Technologies that Enhance/Enable the SOF Warrior's Capabilities

Advanced Tactical Laser

Pointer UAV

BACKGROUND: THE BASIS OF THE NEED

- Through Exhaustive Training, Which Includes Language and Cultural Skills, ***SOF Deploys Into Remote Areas***, Works With Indigenous Personnel, Coalition Forces, and Enemy Supporters. Through Close Interaction With the Local Populations, ***SOF Reaps Valuable Intelligence For GWOT - Find and Fix!***

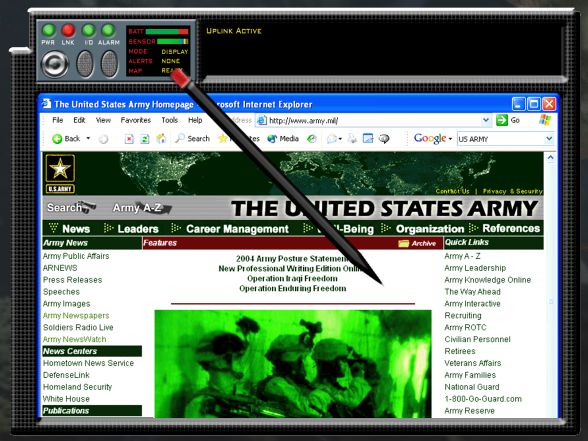
- The OPTEMPO Often Demands Rapid Transition Into New Areas, Languages, Cultural Roots, Etc. and Necessitates Forces ***Train and Prepare Whenever*** the Operator Has Time

- In Such Employments the Operator Must Be Self-Sufficient, Survivable, Equipped With Advanced Information Mining Tools, and ***Naturally Occurring in The Environment***

- SOF Operates Alone in Austere Environments With Only the Items They Can Carry

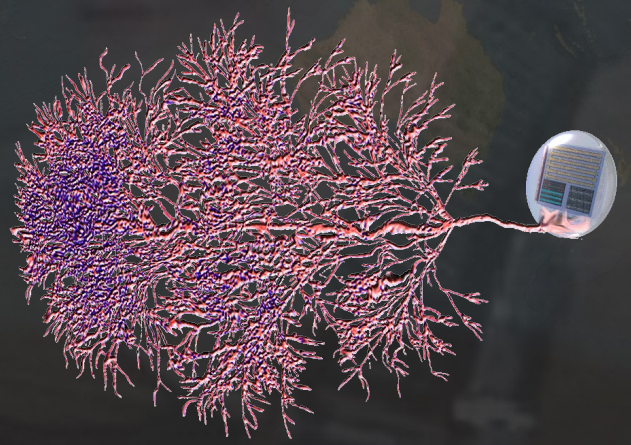
"CULTURAL CHAMELEON" OVERVIEW

- **<u>Immersive (Injectable) Regionalized Training</u>**: Access to Advanced Training Technologies for Rapid Adaptation to the Culture, Language Variations, Complex TTP's, And To Provide The Basis To Conduct Rapid And Intensive Training To Indigenous Surrogate Forces – ***<u>Localized Fluency In All Languages</u>***; Seemlessly ***<u>Blend Into Any Cultural Environment</u>***



Ruggedized Multi-Function Tablet

Immersive Headset



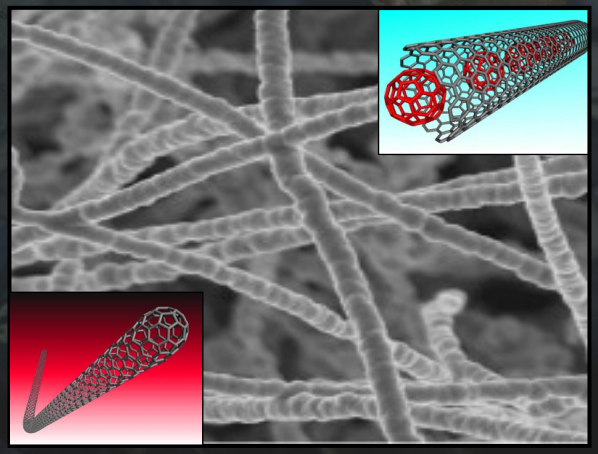
Tactical Neural Nano-Implant

"CULTURAL CHAMELEON" OVERVIEW

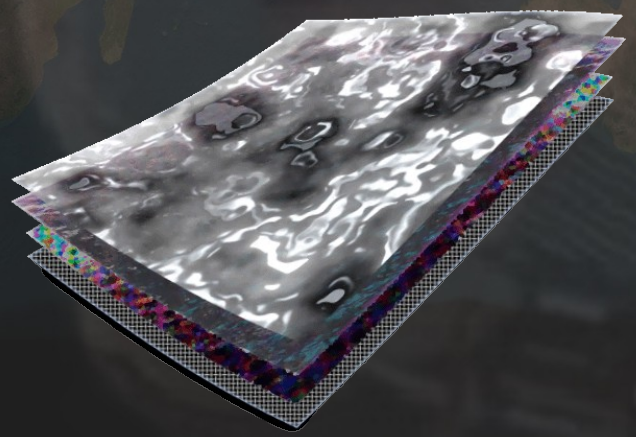
- **Influence And Perception Enablers**: Access to Technologies and Methods That Persuade Target Audiences to a Desired Course of Action (With Verification), and Allow That Operator to Develop Extremely Strong Rapport With an Understanding of All or Targeted Members of the Indigenous Population

"CULTURAL CHAMELEON" OVERVIEW

- **Protection, Concealment, and Lightweight Sustainment Equipment**
  - Have Integrated Self-protection Capabilities From Weapons, Puncture, and Blunt Trauma - ***Indestructibility***
  - Appear to Be ***Standard Regional Dress***, and Be Undetectable by Contact Search or Standard Detection Devices (Metal Detectors, Radars, Etc.)



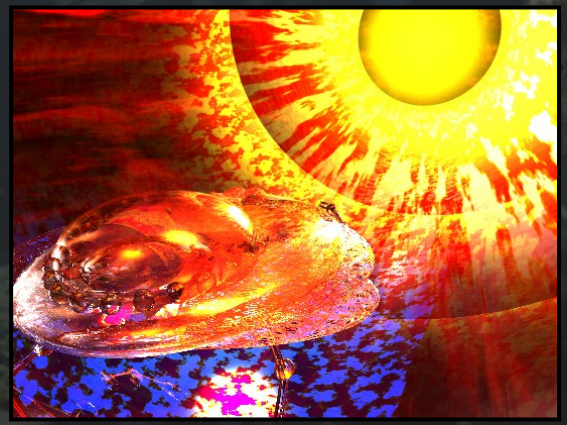
Carbon Nanotube Armor



Adaptive Intelligent Laminates

"CULTURAL CHAMELEON" OVERVIEW

- **Sensors, Communications and Weapons**
  - ***Extend All Senses*** - e.g. Have Enhanced Biological Sensors, to See, Hear or Otherwise Better Sense in Day, Night and Through Obscurants and Noise; Be Able To Detect Stress Or Unusual Behavior
  - Robust LPI/D Communications
  - Integrated ***Tunable Lethality***
  - Leave Behind Small Undetectable ***Persistent and Pervasive Sensors*** That Will Provide Long Term (>5 Years) Video, Audio and Other Hyper-Spectral and Extra-Spectral Coverage.



Sensory Enhancing Nanobots

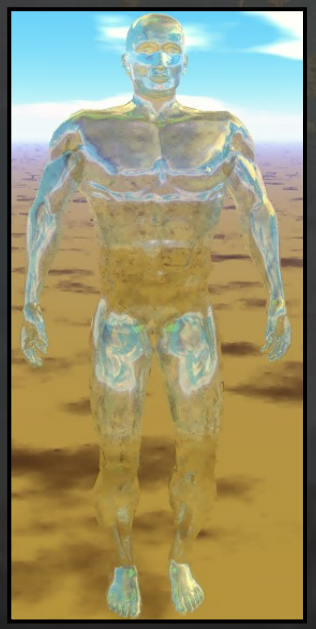
Tunable Directed Energy Weapon

Microbots "Recon Roach"

"SHAPE SHIFT" OVERVIEW

- **<u>Undetected Insertion Anywhere on Globe</u>**: Provide Technologies That Enable SOF Platforms, Equipment and Operators to Be ***<u>"Invisible" in All Media</u>*** (Air, Land, Sea), From All Senses, From All Sensors, in Any Environment

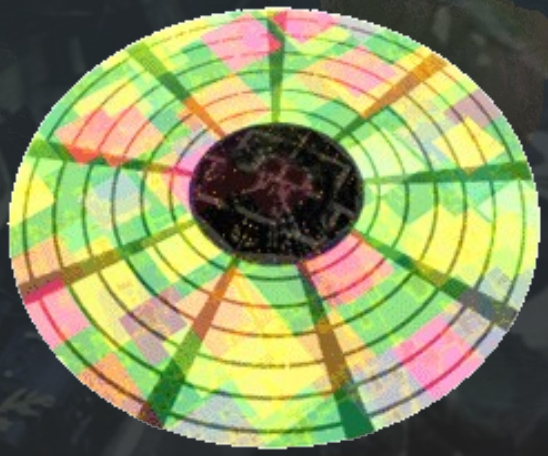
Outline and Thermal Masking



Full Spectrum Masking

"SHAPE SHIFT" OVERVIEW

- **<u>Movement At Will</u>**: Provide Technologies That Enable SOF Equipment and Operators to Blend With Any Environment So As to Be ***<u>Undetected in Plain View</u>*** While Conducting Sensitive Core Task Assignments



Nano-Fabrics Self Heal, Self Clean, and Adopt Color and Texture of Surroundings

COMMANDER'S R&D FOCUS

- **SOF Warrior System**
  - ***Enhanced Protection***: Armor, Lightweight Sustainment Systems
  - ***Enhanced Weaponry*** and Night Vision Devices and Other Individual Sensors
  - ***Signature Management*** and Other Countermeasures in All Environments
  - ***Sense the Enemy*** Regardless of Concealment

- **Sensors**
  - ***Unmanned, Semi-Autonomous/Autonomous Robotic Systems***
  - ***Enhanced, Novel Sensors – Remote and Body Worn***

- **Power and Energy**
  - ***Continuous Operation***
  - ***Emits No signature***
  - ***Lightweight***, Reliable, Effective

CONCLUSION

- Proposed Initiatives Will Provide Substantial Increases in Lethality, Survivability, Communications, and Stealth Capabilities for Individual Warfighters in the GWOT

- These Continuously Evolving Capability Increases Will Allow SOF to Not Only Conduct Find and Fix Operations Globally, But Also to Disrupt or Even Disintegrate the Terrorist Organizations